ABSTRACT

Backround: *Streptococcus mutans (S.mutans) is a major cause of dental caries with biofilm formation. These bacteria are able to form an eksopolisakarida matrix in dental biofilms. Biofilm is a collection of microorganisms attached to a surface and covered with extracellular matrix produced by these cells fromtheir environmet. Photodinamic therapy is an alternative to eliminate bacterial biofilm.* ***Purpose :*** *This study used S.mutans, dioda laser 405 nm as a light source and clorophyll as exogenous photosentitizer. Six different groups were analyzed: control group, chlorophyll group, chlorophyll + laser 75", chlorophyll + laser 90", chlorophyll + laser 105", and chlorophyll + 120", The EPS was determined by using Confocal Laser Scanning Microscope (CLSM).* ***Result :*** *Groups with laser and chlorophyll showed significant EPS degradation compared to control group and chlorophyll group ($p<0.05$). Different irradiation time resulted in significant EPS degradation compared to each other ($p>0.05$).* ***Conclusion :*** *Photodynamic therapy with diode laser 405nm and chlorophyll could degrade S.mutans's EPS.*

Keywords : Photodynamic therapy, diode laser, chlorophyll, S.mutans, EPS